

### Abstract

Process for producing a weld seam (1) in hardenable steel, comprising at least the following steps:

- a) positioning a laser beam (2) with respect to a weld line (3);
- b) heating subregions (4) of the steel by means of the laser beam (2), with the laser beam (2) being guided along a welding track (5) which is longer than the weld line (3);
- c) cooling the heated subregions (4) of the steel.

This welding process produces crack-free welded joins without the need for secondary heating of the hardenable steel. A preferred application area for weld seams of this type is to join components of the drive train of automobiles.

**Fig. 1**